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(54) **One-pot process for preparation of 7beta-amino- and 7beta-acylamino- 3-substituted methyl-3-cephem-4-carboxylic acid derivatives and process for deoxygenation of 7beta-acylamino-3-cephem-4-carboxylic acid 1-oxide derivatives.**

(57) Multi-step one-pot process for the preparation of inter alia 7β-amino- and 7β-acylamino-3-substituted methyl-3-cephem-4-carboxylic acid derivatives starting from 7β-acylamino-3-methyl-3-cephem-4-carboxylic acid 1β-oxide derivatives, comprising a new process for deoxygenation of generally 7β-acylamino-3-cephem-4-carboxylic acid 1-oxide derivatives optionally substituted in the 7α-position, which can be applied as single step or can be incorporated in multistep processes without isolation of intermediates.

The deoxygenation involves the use of phosphorus pentachloride and an olefine for removal of chlorine at least in part by addition to carbon-carbon double bond.

Preferred aspects are lasting protection of reactive substituents by silylation and preparation on industrial scale of generally 7β-amino-3-heterocyclic thiomethyl-3-cephem-4-carboxylic acids starting from suitably 7β-phenyl-acetamido-3-methyl-3-cephem-4-carboxylic acid 1β-oxide.



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EUROPEAN SEARCH REPORT

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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl. 4)
D, A	US-A-4 044 002 (LOWELL D. HATFIELD) * Column 2: "Summary of the Invention"; column 12, lines 23-45 *	1	C 07 D 501/04 C 07 D 501/18 C 07 D 501/20
D, A	US-A-3 641 014 (CHARLES F. MURPHY et al.) * Columns 25-30; claims * & BE - A - 737 121 (Cat. D)	1	
D, A	GB-A-1 467 610 (SANGYOKAGAKU-KENKYUKYOKAI) * Pages 7-8; claims *	1	
			TECHNICAL FIELDS SEARCHED (Int. Cl. 4)
			C 07 D 501/00
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 25-09-1985	Examiner LUYTEN H.
CATEGORY OF CITED DOCUMENTS			
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	